

1) Output function, 2) Operating voltage, 3) Sensitivity, light/dark, 4) Optical axis receiver, 5) Optical axis emitter



#### Basic features

Approval/Conformity	cULus CE Ecolab WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Contrast sensor
Series	6K
Style	Square Connection 90°

#### Display/Operation

Adjuster	button
Display	Output function- LED yellow LED green: Power
Setting	Light-on/dark-on Contrast (switching point) Teach mode Stand./Dyn./Obj.

#### Electrical connection

Cable diameter D	3.50 mm
Cable length L	2 m
Conductor cross-section	0.14 mm <sup>2</sup>
Connection	Cable, 2.00 m, PVC
Number of conductors	4
Polarity reversal protected	yes
Short-circuit protection	yes

#### Electrical data

Input function	Key disable on/off Same function as button
No-load current I <sub>0</sub> max. at U <sub>e</sub>	30 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ripple max. (% of U <sub>e</sub> )	12 %
Switching frequency	1500 Hz
Turn-off delay t <sub>off</sub> max.	0.33 ms
Turn-on delay t <sub>on</sub> max.	0.33 ms
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.4 V

#### Environmental conditions

Ambient temperature	-20...60 °C
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min

IP rating	IP67
IP rating per DIN 40050	IP69K

#### Functional safety

MTTF (40 °C)	426 a
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#### Interface

Switching output	PNP normally open/normally closed (NO/NC)
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#### Material

Housing material	ABS
Material jacket	PVC
Material sensing surface	PMMA

#### Mechanical data

Dimension	12 x 37.9 x 21.6 mm
Mounting part	Screw M3

#### Optical features

Ambient light max.	5000 Lux
Average power Po max.	390 $\mu$ W
Beam characteristic	Focused
Laser class per IEC 60825-1	1
Light spot size	0.7 x 0.7 mm at 250 mm
Light type	Laser red light
Principle of optical operation	Diffuse sensor, focused
Pulse duration t max.	0.7 $\mu$ s
Pulse frequency	11.7 kHz
Pulse power Pp max.	8.5 mW
Switching function, optical	Light/dark switching
Wave length	650 nm

#### Range/Distance

Range	1...250 mm
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#### Remarks

Order accessories separately.

For additional information, refer to user's guide.

The sensor is functional again after the overload has been eliminated.

Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.

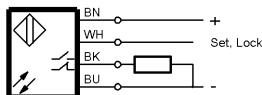
Do not press key using a pointed tool.

When using as a UL product the ambient temperature Ta max. must not exceed 50°C.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

#### Wiring Diagrams



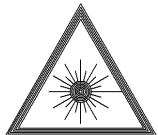
#### Opto Symbols



Photoelectric Sensors  
BKT 6K-002-P-02  
Order Code: BKT0012

**BALLUFF**

### Warning Symbols



LASER CLASS 1 per IEC 60825-1